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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

Douglas N. CURRY

Group Art Unit: 2624

Application No.: 10/025,671

Examiner: A. Do

Filed: December 26, 2001

Docket No.: 101256.01

For: A SYSTEM AND METHOD FOR DIRECTED ACUITY SEGMENTATION ' RESOLUTION COMPRESSION AND DECOMPRESSION

REPLY BRIEF

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Technology Center 2600

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following remarks are directed to the new points of argument raised in the Examiner's Answer dated May 5, 2004.

I. Statement of Related Appeals and Interferences

The Examiner's Answer asserts that Applicant's Appeal Brief did not include a statement regarding related appeals and interferences. As stated at page 1 of Applicant's Appeal Brief, there are presently no appeals or interferences, known to Applicant, Applicant's representative or the Assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

II. Claims 1-6, 8 and 9

The Examiner's Answer at page 4 asserts that "the pixel discarding can be performed in the pre-process of Hsu (pixel decimation, col. 4, lines 5-7) and the pixel maintaining can be

performed by Hyatt" (col. 206, lines 26-29). Notwithstanding these assertions, Hsu and Hyatt, like Honma, do not teach or suggest "discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, ... synthesizing data from the data indicative of the plurality of explicit pixels to provide the data corresponding to at least one synthesized pixel, the at least one synthesized pixel representing at least one discarded pixel," as recited in claim 1.

Hsu discloses that "image resizing can be accomplished using standard pixel doubling, pixel decimation and pixel averaging techniques" (col. 4, lines 5-7). However, nowhere does Hsu disclose or suggest "discarding pixels along a direction parallel to an edge," as recited in claim 1. Applicant respectfully submits that the standard pixel techniques described in Hsu do not teach, suggest or even infer discarding pixels along a direction parallel to an edge as recited in claim 1.

Hyatt discloses that "adjacent pixels may be selected along a [direction, sic] perpendicular to the edge 980 at the edge pixel position to minimize effects of the adjacent pixels being edge pixels" (col. 206, lines 26-29). However, this disclosure does not remotely teach or suggest maintaining pixels along a direction perpendicular to the edge while the pixels along a direction parallel to an edge are being discarded, as recited in claim 1. Hyatt provides no guidance relating to discarding/maintaining features with respect to a directionality of an edge.

The Examiner's Answer further asserts at page 4 that "Hsu also teaches an erosion operation for removing/discarding pixels from boundary of an edge" (col. 5, lines 23-25). However, the purpose of Hsu's erosion is to obtain "the edge information 502, the dilated edge 503, and the object extraction" from the original image 501 (col. 5, lines 25-29). Hsu's erosion does not selectively discard or maintain pixels based upon directionality with respect to an edge. Applicant submits that Figs. 5B-5D of Hsu demonstrate that Hsu's rendered edge

information 502-505 does not involve maintenance of pixel density in a direction perpendicular to the edge while the pixel density in a direction parallel to an edge is thinned by discarding, as claimed in claim 1.

For the foregoing reasons, Hsu and Hyatt do not cure the deficiencies of Honma with respect to claims 1-6, 8 and 9.

III. Claims 15-17

The Examiner's Answer at page 5 admits that "Hyatt does not teach using the extra resolution in direction substantially perpendicular to the edge of marks," but asserts that "this limitation has been read in the PAA." The Description of Related Art regarding continuous and non-continuous tone art information, like Honma and Hyatt, fails to disclose "the non-continuous tone data compressed by discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, ... a decompressor that decompresses a data bitword-map to provide a high spatial resolution data containing non-continuous tone data using extra resolution in a direction substantially perpendicular to an edge of marks, and that decompresses the data bitword-map to provide a low spatial resolution continuous tone data," as in claim 15.

The Description of Related Art recites "therefore, more spatial resolution is necessary to render non-continuous tone regions than is necessary to render continuous tone regions" (page 1, lines 19 and 20). The Description of Related Art does not teach or suggest "the non-continuous tone data compressed by discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge," as recited in claim 15 because the description defines the continuous and non-continuous tone art information, but does not describe the recited manner of compression. Accordingly, Applicant respectfully submits that the Applicant's Description of Related Art does not teach "providing high spatial

resolution data containing non-continuous tone data using extra resolution across edges of marks" as asserted in the Examiner's Answer at page 5.

The Examiner's Answer at page 5 further asserts that "Hyatt actually removes the pixels 981, 972 and 983 as shown in Fig. 9J, not only changing pixel fill information regarding color information as alleged by the Applicant." Hyatt discloses that "similarly, for a moving trailing occulting edge, pixel words associated with the adjacent surface can be used to fill a pixel vacated by a trailing edge of a moving occulting surface" (col. 205, lines 35-39). Specifically, "one configuration for fill processing discussed herein involves generating next and prior edge pixels 976 and 977 respectively for a moving edge. The prior edge pixels 977 contain smooth color information" (col. 205, lines 43-46). Hyatt is clearly directed to filling of color information of an object at the forward edge of the movement and not discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, because Hyatt's fill processing with smooth color information to facilitate graphical movement of a colored object does not serve to compress or decompress pixels by selective removal of actual pixels from the image pixel density. Applicant respectfully submits that Hyatt does not teach removing pixels along a horizontal direction parallel to an edge as asserted by the Examiner's Answer at page 5.

Applicant respectfully submits that the combination of Honma, the Applicant's Description of Related Art and Hyatt do not result in the above-recited claim features.

IV. Claims 13, 14 and 18

The Examiner's Answer at page 6 admits that "Shannon does not teach discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge." The Examiner's Answer asserts, though, that Shannon extracts "the four pixels 023 therefrom, and these four pixels belong to a line of dithered image data." Shannon's "dither," however, refers to scaling and converting of a color image into

monochrome data (col. 2, lines 33-34), and not "pixels of non-continuous tone data," as recited in claim 13. As disclosed in the Description of Related Art, non-continuous tone art information relates not only to spatial resolution, but also to color information. (See specification at page 1, lines 15-19).

Regarding Hyatt, the Examiner's Answer at page 6 again asserts that "Hyatt clearly teaches removing real pixels 972, 983, ... along a horizontal direction parallel to an edge while selecting/maintaining pixels along a vertical direction perpendicular to the edge." As set forth above, Hyatt relates to fill processing for a moving trailing occulting edge, which fill processing relates to color information, but does not relate to "discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge," as recited in claim 13.

Finally, the Examiner's Answer at page 7 asserts that Fig. 9 of Shannon "clearly shows large soft areas of light shades and dark tones." The Examiner's Answer at page 7 further asserts that "Shannon does teach color information as a program, accepts pixel color or grayscale DIBs (col. 13, lines 56-58)." Shannon shows in Figs. 9A and 9B a grayscale image, which does not relate to tone information. Specifically, Shannon discloses "the program accepts 8-bit per pixel color or grayscale DIBs and produces two 1-bit per pixel output DIBs" (col. 13, lines 56-58). This disclosure is consistent with the background disclosure of Shannon "first, the application programs [program, sic] sends the entire color image to the driver where the color data is scaled and dithered into monochrome data" (col. 2, lines 32-34). Shannon's dithering does not result in "decompressing a single byte of compressed data to produce four pixels of non-continuous tone data," as recited in claim 13 because Shannon does not decompress data to result in tone data. Shannon's dithering does not result in tone data, which includes color information.

Thus, Applicant respectfully submits that a combination of Shannon and Hyatt does not result in the claimed features.

V. Conclusion

Based on the aforementioned remarks, the Honorable Board is requested to reverse the rejections set forth in the Final Rejection and to direct Examiner to pass this application to issue.

Respectfully submitted,



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